



## The Special Problems of Serials

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THE BIBLIOGRAPHIC control of serial publications has never itself been brought successfully under control. Librarians have never collectively given definite answers to several questions: Should serials be cataloged by monograph catalogers? Should the same rules for choice of entry be applied to serials as to monographs? Should a serial be cataloged from the first issue or only after a complete volume? When a serial changes its title (or entry), is it to be treated as a new serial, or treated as one serial under the new title—in fact, what constitutes a serial? Within an individual library it is not unusual for the same serial to be entered one way in the card catalog, another way in the serials check-in file, and perhaps even a third way in a computer-produced listing.

In the wider world outside of individual library control, citations to the same serial, whether referenced by authors or by abstracting and indexing services, often vary considerably. Union lists of serials add a further dimension of confusion by amalgamating varying entries from different holding libraries into one listing, often with a single entry per serial, to conserve space rather than to maintain bibliographic accuracy. Thus, a user may have to go from an author's indexing journal citation to a library catalog or serial record (or both) and then to a union list to locate the library which may actually have the desired issue—cataloged under still another choice or form of entry.

In addition to all this variation in entry, there is wide variation in the bibliographic description of a serial and in the identification and formatting of the bibliographic record elements in machine-readable form. Few serials listings are produced today by manual means and the variations in machine formats are a serious deterrent to producing

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adequate bibliographic tools for interlibrary loan and other cooperative purposes. Given this state of chaos within national, regional, and even state or local boundaries, what hope can there be for international solutions to the cataloging of serials and for a data base of bibliographic records for serials in machine-readable form? Will the solutions resolve any problems, or only create more?

Easy or ultimate solutions to the complex problems of the bibliographic control of serials cannot be expected; however, the recent surge of interest and activity in this area is extremely encouraging. What is being attempted is nothing less than the international integration of standards for entry, identification and description of serials. The expectation is that these standards (and in some cases, systems to support these standards) can be integrated into national and local systems without major disruption. Because no solution can be imposed on the entire body of serials and/or on the totality of bibliographic records that provide access to those serials, any approach to solving the problems must be applied initially to some manageable subset and must coexist with the remainder in unreconstructed form. This is no small order, and it cannot be expected that the solutions being developed will have no flaws the first time around, that they will be accepted by all with a uniform degree of enthusiasm, or that their implementation will cause no initial confusion.

The compatibility necessary for a rational approach to bibliographic data handling at any level requires the establishment of standards and conformity to them. The history of the effort to resolve the problems of serials is one of attempts to set standards. These standards relate to various aspects of the serials problem. Dealt with here are only those problems relating to bibliographic aspects of serials control, not to holdings or other facets of serials processing. These bibliographic standards are concerned with choice of entry, form of entry, identification systems, bibliographic description, and formats for machine-readable records—all of them are interrelated to some degree. Space does not permit extensive treatment here of any of the standards or of the systems that support them, nor will there be an attempt to review the voluminous recent literature. Instead, this paper will sketch the major developments toward international standardization relative to serials, evaluate their contributions, point out the problems, and summarize present prospects.

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### THE PARIS PRINCIPLES AND AACR

In 1961 the International Conference on Cataloguing Principles (ICCP) in Paris formulated what have become known as the Paris Principles.<sup>1</sup> Spalding summarizes these principles in relation to choice of entry for serials:

Delegates to that conference were concerned not just with the cataloguing of monographic publications, not just with the cataloguing of serial publications, but with the cataloguing of both for display in a common catalogue, governed in most cases by common principles and rules. Fundamental principles that were agreed to at the ICCP were: 1) that cataloguing requires a system of multiple entries, of which one is treated as the main entry and others are treated as secondary; 2) that the main entry should be the author when there is a personal author; and 3) that the main entry for works that represent the expression of collective activity of a corporate body should be the corporate body. Just as there is no principle covering monographs, as such, there is no principle covering serials, as such. Serials are mentioned twice in the Statement. The first time is in a footnote to the principle setting forth the conditions of main entry under corporate body (see section 9.12, footnote 7). The footnote specifies conditions for entering serials under corporate body even when the body functions more as editor than as producer of the content, the controlling criterion here being the presence of the name of the body in the title of the serial. The other mention of serials is in the principle covering entry under title. Here (section 11.14) entry of works, including serials, known primarily or conventionally by their titles are to be so entered (even if they are the products of corporate bodies).<sup>2</sup>

Interpretation of and conformity to the Paris Principles in the case of serials has varied. For example, the introduction to the *Anglo-American Cataloging Rules* (AACR) states that:

In its rule for serials (rule 6) the [Catalog Code Revision] Committee held that the inclusion in the title of a serial of the name or part of the name of the issuing corporate body is too powerful a criterion to be nullified when, in unusual cases, no account of the activities of the body is included in the publication. It also held that 'known primarily or conventionally by title' is too vague a criterion.<sup>3</sup>

Whatever the interpretation of the Paris Principles regarding entry of a serial under issuing body or under title, it is clear that they call for main entry under corporate body in some cases, and main entry under title in others.

With respect to form of entry, conformity of most U.S. libraries to the AACR has been impaired by the policy of "superimposition" which was adopted by the Library of Congress (LC). This practice was incorporated to ease the impact of the new rules on the catalogs and cataloging activities of U.S. libraries. Under superimposition, rules for headings were to be applied only to name headings being established for the first time. New works by previously established authors were to appear under the same headings. If the name heading had not previously been established, it was to be established under the AACR rules. Given the preponderance of corporate headings in records for serials, and the continuing nature of serials, this policy may have placed a greater burden on serials cataloging than on monograph cataloging. If adapting to new forms of old headings seemed too difficult at that time, it is even more difficult now. The problem has grown with every new title cataloged under a superimposed heading. Serials cannot be "desuperimposed" unilaterally; no other halfway measures appear to be feasible. If the LC catalog is closed at the end of this decade (or whenever all titles currently cataloged by LC are being put into machine-readable form), all future cataloging can then conform to AACR.

The National Library of Canada (NLC) has pioneered in the area of bilingual cataloging during this period. For every official name heading in English, NLC must provide the equivalent in French, and vice versa. This is a problem that will be encountered in international exchange of records, as well as within bilingual countries. Unless the language of entry in the source country is adopted by all others, varying languages and form of entry for the same body will have to be handled by means of authority files. Establishment of the form of entry with reference to a centralized authority within each country appears to be ultimately imperative.

#### IDENTIFICATION SYSTEMS

Another approach to the serials problem has been to provide a brief but unique identifying code for each serial, to serve as a short-form citation, to facilitate ordering, etc. Codes for three such identification systems have been developed and are in use. The first of

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these is the International Code for the Abbreviation of Titles of Periodicals. The ISO 4-1972(E) standard of the International Organization for Standardization (ISO) provides a set of rules to guide users "in preparing unique, unambiguous abbreviations within a specific frame of reference for the titles of publications used in footnotes, references, and bibliographies."<sup>5</sup> This standard is also an American National Standard (ANSI Z39.5-1969).<sup>6</sup> The *International List of Periodical Title Word Abbreviations* (ISO R833-1974),<sup>7</sup> formerly maintained by the National Clearinghouse for Periodical Title Word Abbreviations, is now maintained by the International Serials Data System (ISDS). There is no universal guarantee of uniqueness, nor can the full title always be reconstructed with certainty from the abbreviated title. An example of the abbreviated title code is "j libr automat" for the *Journal of Library Automation*.

The second identification system, CODEN,<sup>8</sup> is a unique five-character code (with an optional sixth character for machine checking) originally designed as a mnemonic representation of the title of scientific and technical serials. The assignment of codes is no longer limited to science and technology titles, however, nor has the mnemonic feature been maintained. An example of CODEN is "jlauay" for the *Journal of Library Automation*. The American Society for Testing Materials maintained CODEN until 1975, when responsibility was assumed by the Chemical Abstracts Service.

Finally, there is the International Standard Serial Number (ISSN). The Standard Serial Number (SSN), adopted as an American National Standard (ANSI Z39.9-1971) in late 1970,<sup>9</sup> was approved in May 1971 by Technical Committee 46 of the ISO as the basis for ISSN. The ISSN is now a fully approved international standard (ISO 3297),<sup>10</sup> requiring that a key title be established as the basis for each ISSN, and that the code be maintained by the ISDS. The ISDS, operating within the Universal Science Information System (UNISIST), is a network of national and regional centers formed for the purpose of developing and maintaining a comprehensive registry of serial publications in all languages and subject areas. The national or regional centers are responsible for assigning the ISSN and key title to each serial title published within their respective countries or regions. The national center for the United States is the National Serials Data Program (NSDP).

The ISSN is a seven-digit code (with a required eighth digit for machine checking) represented as two groups of four digits separated by either a space or a hyphen and preceded by the legend ISSN. Each

ISSN is assigned to a single serial title, as represented by a key title which is also unique, and with which the ISSN is always associated in the ISDS system. For example, the key title and ISSN for the *Journal of Library Automation* are "Journal of library automation 0022-2240."

The *Guidelines for ISDS*, published in 1973,<sup>11</sup> specify what is to be considered a serial, when to assign a new ISSN and key title, how to construct the key title, etc. In order to be a unique identifier, the key title must incorporate elements in addition to the bibliographic title when a title consists only of a generic term, and whenever two or more serials have the same title. In the case of the generic title, the key title includes the name of the issuing body, as given on the piece, which is separated from the title by a hyphen set off by spaces, e.g., "Annual report - Board of Public Accountancy." In the case of serials with the same title, one or more elements—such as place of publication, date of publication, edition, or form of reproduction—may be added in parentheses as qualifiers, e.g., "Russian history (Pittsburgh)."

For each serial assigned an ISSN and key title, the regional or national center must submit to the ISDS International Center in Paris a bibliographic record containing, in addition to key title and ISSN, certain mandatory elements such as variant titles, starting date, country of publication and imprint. Additional elements may be included if available. For the purposes of the ISDS record, the key title serves as the "main entry."

The ISSN standard and its supporting ISDS system require, in effect, a set of two unique identifiers: an identifying number (ISSN) and an identifying title (key title). Each of the two identifiers has its own virtues and uses, and the two must be perfectly synchronized, as stipulated in the ISDS system. A new key title (and therefore a new ISSN) is created according to explicit rules in the *Guidelines for ISDS*, based exclusively on changes in the title of the serial. If an issuing body changes and the title does not, the key title and ISSN remain the same.

#### BIBLIOGRAPHIC DESCRIPTION

The International Standard Bibliographic Description for Monographs (ISBD(M)), drawn up by a working group of the International Meeting of Cataloguing Experts in 1969 and published in its first standard edition in 1974,<sup>12</sup> has been incorporated into the 1974 revision of AACR Chapter 6<sup>13</sup> and has been widely adopted by member nations of the International Federation of Library Associa-

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tions (IFLA). As stated in the published document, the ISBD(M) "specifies requirements for the description of printed monographic publications . . . assigns an order to the elements of the description, and specifies a system of punctuation for that description."<sup>14</sup>

In 1971 a Joint Working Group of the IFLA Committee on Cataloguing and the IFLA Committee on Serial Publications was formed to draw up an ISBD for serials (ISBD(S)) following the ISBD(M) as a model insofar as practicable; its recommendations were published in 1974.<sup>15</sup> The Joint Working Group sought for compatibility of ISBD(S) with both ISDS and ISBD(M). While ISBD by definition is concerned only with description and not with entry, ISBD(S), as recommended by the Joint Working Group, "specifies requirements for the description and identification of printed serial publications"<sup>16</sup> and adopted the "distinctive title" concept, which constructs the title in the same manner as the ISDS key title when the title consists of a generic term followed by an issuing body which is not grammatically linked to the title itself. The ISBD(S) was thus in conflict with the ISBD(M) in using the "distinctive title" (which is sometimes constructed and sometimes simply transcribed from the publication); the ISBD(M) "title proper" is always a faithful transcription of the title on the publication. ISBD(S) was inconsistent in that it did not include the key title qualifiers in the distinctive title.

#### BIBLIOGRAPHIC ENTITY

Sauer notes that in order to make use of the ISSN in conjunction with cataloging records for serials, "the bibliographic entity created according to any given set of cataloging rules or conventions [must] be compatible with the bibliographic entity created by a key title."<sup>17</sup> To accomplish this, the cataloging entry must change when—and only when—the key title changes. As one way to achieve this compatibility, Howard<sup>18</sup> proposed that AACR be changed to provide for main entry under title for serials in all cases, and in fact, at the American Library Association (ALA) annual conference in 1975, the Catalog Code Revision Committee (CCRC) voted to recommend this proposal for consideration by the Joint Steering Committee for Revision of AACR. This recommendation was rescinded at the ALA Midwinter Meeting in 1976 in favor of a single rule for choice of entry for both monographs and serials.

An alternative suggestion by Howard was to amend AACR to provide for title main entry for all serials except those with titles

which consist of a generic term or those which begin with a generic term followed only by the name of the issuing body. Serials in these groups would be entered under issuing body. This approach would assure that the AACR main entry would change whenever the key title changed and would provide equal compatibility with ISDS without abandoning the Paris Principles (which currently form the sole basis for international compatibility with respect to entry).

Also awaiting resolution are the differences between what are considered to be major and minor changes to the title in the AACR and ISDS. For example, AACR specifies a new entry when a title change would affect filing, but a filing change may not be considered cause for a new key title in ISDS. Sauer<sup>19</sup> predicts that this problem will be given consideration in the impending revision of the *Guidelines for ISDS*.

#### FORM OF TITLE

Whether the title is in all cases the main entry or whether serials are in some cases entered under issuing body, there must be compatibility between the title according to ISBD(S) and the title according to AACR, both of which are descriptive in nature. Furthermore, there should not be a conflict with the ISDS key title, which is a constructed title for identification purposes. At a meeting on October 16-17, 1975, representatives of the IFLA Working Groups on Monographs, Serials, Maps and Non-book Materials agreed that a framework for a general ISBD—ISBD(G)—should be provided to which all specialized ISBDs would conform. At the October 21-22, 1975 ISBD(S) revision committee meeting, it was agreed that title and statement of authorship area of ISBD(S)

should be confined to elements of description only, with provision for the inclusion of identification elements elsewhere in the record. It was further agreed that the precise wording of ISBD(M) be used wherever possible in the revised ISBD(S). This agreement provides a firm basis for implementing the North American proposal for this area: that the title proper concept of ISBD(M) be adopted for ISBD(S) in lieu of the present distinctive title—thus eliminating the need for constructing a title when a generic term is involved. It was also agreed that author statements (or statements of responsibility) would continue to be recorded as they appear on the issue, including hierarchical statements when present.<sup>20</sup>



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It was also agreed that the ISSN/price area of ISBD(S) would be revised to include the key title as established by ISDS.

Anticipated revisions of the AACR, ISDS and ISBD(S) are expected together to provide the necessary compatibility for incorporation of the ISSN/key title and ISBD(S) into the revised AACR rules. Retention of the name of the issuing body as part of the title, when grammatically linked, will remain a provision. Spalding has proposed the interesting idea regarding the constructed title that would treat the generic title as a title likely to be duplicated; "In cases of duplication of title, the first preference for additions to the title should be the issuing body if there is one; in default of which place of publication should be added."<sup>21</sup> With the removal of elements of identification from the ISBD(S) title, this proposal would apply only to the key title.

#### THE MARC SERIALS FORMAT

Avram has pointed out that in order to achieve a standard body of bibliographic records, the records must be standardized in both content and format.<sup>22</sup> From the previous discussion it is evident that progress is being made toward standardization of the content of serial records. Progress likewise continues to be made toward standardization of the format for the representation and exchange of bibliographic data for serials in machine-readable form. As a result, a serious effort to create a U.S.-Canadian data base of standard serial records is now emerging.

The machine-readable cataloging serials communications format (MARC) is the result of two concurrent developments. In 1967, LC, the National Library of Medicine and the National Agricultural Library initiated the Serials Data Program (SDP) with the intent of creating a national inventory of serials in machine-readable form. The objective of the first phase was to define the data elements required and to develop a standard format for their representation and communication in machine-readable form.<sup>23</sup> In response to the MARC Pilot Project, the LC Information Systems Office was concurrently revising the MARC format for books and working toward the establishment of the standard communications format for the exchange of bibliographic data in machine-readable form. This communications format later became both the ANSI Z39.2-1971<sup>24</sup> and the ISO 2709-1973(E)<sup>25</sup> standard formats. Because a major conclusion of the SDP was that sharing of serial records could be achieved only

through adherence to standards for both the bibliographic data and its representation in machine-readable form, the designated data elements were put into the MARC format and published in 1970.<sup>26</sup>

Wherever data elements were the same, the MARC serials format used the same content designators (tags, indicators, and subfield codes) as the books format, and different content designators where the elements were different. Nevertheless, the serials format differed substantially from the monograph format in two ways: (1) in assigning more specific tags, especially in the notes area, so that notes could be selectively omitted from union lists; and (2) in including fields for linking entries. These links provide machine linkage to related records and also provide a mechanism for generating notes about linking records without keying the data twice. While this mechanism does in fact reduce key strokes, it adds complexity in editing and programming.

#### NATIONAL SERIALS PILOT PROJECT

Between September 1969 and June 1971, the Association of Research Libraries administered a pilot project on behalf of the three national libraries under the policy direction of the U.S. National Libraries Task Force on Automation and Other Cooperative Services. The intent of the pilot project was to build a machine-readable file of bibliographic data on primarily current scientific and technical serials, including holdings information for the three national libraries. The MARC serials format was to be used and records were to be acquired by reformatting the *Union List of Scientific Serials in Canadian Libraries*.<sup>27</sup> This proved to be impossible without manual intervention because the data elements in the records were not identified at the level of specificity of the MARC format. Faced with these difficulties, the project attempted to create a consistent data base from Index Medicus records reported to the Union Catalog of Medical Periodicals and from records from the National Agricultural Library CAIN file; however, it was impossible to construct a consistent data base using multiple files and "authority sources each of which was not only inconsistent with the others but was internally inconsistent as well."<sup>28</sup>

#### MARC SERIALS DISTRIBUTION SERVICE

The first operational use of the MARC serials format within LC was

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for the production of book catalogs for the Main Reading Room and Science Reading Room collections.<sup>29</sup> Begun in May 1971, the project provided in-depth testing of the format on LC records as well as experience in the conversion of retrospective records, and demonstrated the practicality of MARC-produced catalogs combining both monographic and serial records.

As LC neared completion of the reading room projects in 1972, it turned its attention to providing a regular MARC Distribution Service for serials.<sup>30</sup> Recognizing that conversion of records for all serial titles currently received by LC was desirable, it was nevertheless necessary to begin by going forward, i.e., by capturing new cataloging on a regular basis, before looking backward to existing catalog records. Accordingly, all current cataloging for serials in Roman alphabet languages has been input since 1973, and romanized records for all serials in nonroman alphabets were included beginning in September of the same year. For the first time, a body of serial records was available in machine-readable form from a central source with full standard bibliographic data and full standard content designation.

#### UNIMARC

The Universal MARC (UNIMARC) format<sup>31</sup> being developed by the IFLA Working Group on Content Designators will be used for communicating bibliographic records among national agencies, so that each country will require only one translation program into and out of its national format. The existence of the UNIMARC format will not affect the U.S. MARC serials format, but it will significantly ease the burden of maintaining a data base of serial records in the future. Instead of requiring that each national agency either create records anew for serials already put into machine-readable form by another national agency or write conversion programs from each national serials format to the U.S. format, the receiving national agency will need only a single program to convert records in the UNIMARC format from any country to its national format. As with shared cataloging, the receiving national agency will have to process the records through its authority system, but the descriptive portion of the record will be in accordance with ISBD(S).

#### CONSER

The Conversion of Serials (CONSER) Project is an ambitious project to build an initial U.S. and Canadian serials data base. A

cooperative project, CONSER operates under the management of the Council on Library Resources (CLR).<sup>32</sup> Anable<sup>33</sup> has reported the history of the Ad Hoc Discussion Group on Serials Data Bases, from which the CONSER Project developed, and Upham<sup>34</sup> has chronicled the progress of the project itself.

The CONSER Project is attempting to create a data base which is a workable compromise of the ideal of consistency and the present state of confusion. To create a totally consistent data base would require resolution of all of the problems that this paper has mentioned, as well as many that it has not. Ideally, perhaps, the project would not even have started until: (1) ISBD(S) had been revised, (2) ISDS guidelines had been revised, (3) title main entry decision had been made, and (4) AACR had been revised to incorporate ISBD(S). After all this was accomplished, it would be time to make further revisions. In addition, the capability to tie in to the LC authority system should be a prerequisite to the project's implementation. The need for such a store of serial records in machine-readable form has existed for many years (witnessed by the two earlier phases of the National Serials Data Program), but only now have enough of the necessary components become available to translate the need into an operational project.

The CONSER Project seeks to develop no new standards itself, but rather to utilize existing standards insofar as possible. As an implementation, it must use what resources are available and work out the best compromise possible, making changes over time as new facilities develop. It operates with a set of "Agreed upon Practices"<sup>35</sup> dealing with bibliographic considerations, mandatory fields, which fields may be changed in an already authenticated record, format requirements, etc. Basic bibliographic standards to be followed include AACR for choice and form of entry, including successive entry cataloging. Because the data base is not limited to newly cataloged items and it is impractical for each participant to recatalog existing records, provision is made for inputting latest entry records, non-AACR headings, etc. All contributed records are subject to authentication or verification by NLC for Canadian imprints and by LC for all others. ISSN, key title, and other ISDS requirements are input or authenticated by the ISDS/Canada national center or NSDP, respectively.

The CONSER Project has adopted the MARC serials format as the standard for content designation of CONSER records. All data elements in the record must have full content designation. The content designation is reviewed upon authentication, as is the data content of the record. In the case of differences between the Canadian and U.S.

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serial formats, the Canadian content designator is changed to the U.S. equivalent when there is a one-to-one correspondence. When the Canadian format provides for greater expansion in content designation, the Canadian format designation is retained in the on-line record but is converted to the U.S. format designation for output to LC.

The MARC serials format has been expanded to accommodate additional elements needed by NLC, ISDS and the abstracting and indexing community, as well as by the nature of the cooperative project itself.<sup>36</sup> The records which NSDP and ISDS/Canada are required to send to the ISDS Paris center can now be extracted from the MARC-formatted CONSER record. It is unfortunate that when the ISDS system was established, its format, although conforming to the communications format structure, ISO 2709-1973(E),<sup>37</sup> was not fully compatible with the U.S. or Canadian MARC serials formats with respect to content designation. While it is now possible to convert from the MARC serials format to the ISDS format, it is not possible to convert some fields in the opposite direction. Certain varying forms of title and certain linking entries do not have sufficiently specific identification to allow extraction of the data elements in the MARC format.

By contractual agreement, the Ohio College Library Center (OCLC) is providing on-line facilities for the initial CONSER Project. Approximately 85,000 records of the Minnesota Union List of Serials, 28,800 LC/MARC serial records, and 5,000 NLC/MARC serial records constitute the initial CONSER data base. As of this writing, an additional 12,000 records have been input by participants—approximately 3,000 by NLM, 6,000 by Cornell University, and 3,000 by other participants. The participants can also update any unauthenticated serial record and "claim," i.e., each can add its holdings symbol to, any serial record, authenticated to unauthenticated. Upon updating or claiming an unauthenticated record, a surrogate of the publication (e.g., title page or masthead) annotated with the OCLC control number is sent to LC or NLC for authentication. The authentication center reviews that record against its own catalog record (if any), updating the on-line record as necessary and adding its authentication code.

LC will use the CONSER system to input its own records and to authenticate others, and will subsequently distribute all records input or authenticated by NLC or itself in the MARC Distribution Service. Input by LC has not begun as of this writing, pending successful completion of a final test of getting records on tape from OCLC.

Conversion to the on-line system, however, is expected by the end of June 1976. LC has already begun to authenticate records, although it is not yet staffed for full operation of the authentication process.

Because LC agreed to withhold from the CONSER data base all records with superimposed headings, nearly 1,900 records are now being assigned the AACR form of heading and will be subsequently loaded into CONSER. The ALA or "superimposed" form of entry, when used by LC, will be retained in a special set of fields for use in LC's own products and services.

There have been many problems with CONSER, and the project has been costly in time and money. The on-line facilities have not become available on schedule, and this delay has made internal operations of the participants difficult or, in some cases, nonexistent. It will undoubtedly be easy to see in retrospect what should have been done differently. In addition to the actual count of records inputted and authenticated during the project period (anticipated to be 200,000-300,000), much will have been learned on which to base the continuation of CONSER.

## CONSER II

From the beginning it was planned that the CONSER Project would have a lifespan of only two or three years, after which LC would assume its management and operation. A study funded by the Council on Library Resources is now underway at LC to determine the procedures, hardware and software needed for LC to assume this role by November 1977. The study will also include long-term objectives for serials processing at LC so that the CONSER continuation effort will fit in with long-range system design.

The original purpose of developing the ISBD(M) was to make it easier for people to interpret bibliographic records in unfamiliar languages. It soon became obvious, however, that the consistency provided by the ISBD(M) would greatly facilitate the process of "format recognition," i.e., the algorithmic recognition of data elements by the computer. The format recognition programs developed by LC for the MARC content designation of records for books were subsequently modified to take advantage of the ISBD(M) order of elements and distinguishing punctuation. As has been noted earlier in this paper, the content designation of serial records is extremely, perhaps excessively, complex. It is possible that the ISBD(S), when revised and adopted by IFLA member countries, will enable development of format recognition programs for serial records.

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Despite standard description of serials provided by ISBD(S), one-to-one correspondence achieved between the ISDS record and the cataloging record (according to AACR), and the international exchange of machine-readable records made possible by UNIMARC, the problem remains of an international cataloging code that would provide compatibility—at least within certain limits—of entry as well as description. This would seem to be a necessary prerequisite to the implementation of the program of Universal Bibliographic Control in which each serial (or monograph) would require only one-time cataloging in the country of origin. A significant step in this direction was taken at the April 1976 meeting of the IFLA Working Group on Content Designation; agreement was reached on the subfield codes for designating the various elements within a personal or corporate name heading in the UNIMARC format.

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